

4. Claims 61-86 were rejected under 35 U.S.C. § 112 (second paragraph) as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.
5. No claims were allowed.

II. Response to the Objection to the Specification

The specification was objected to for lack of antecedent basis because the numbering in the exon sequences in the sequence listing did not indicate their position in the BRCA2 gene sequence. Applicants respectfully submit that the skilled artisan could determine the position of each exon and polymorphism therein using the disclosure in the specification. Specifically, the skilled artisan could readily align the exon sequences with the full length BRCA2 sequence from GenBank database (referenced in the specification on page 5, lines 22-23) to determine the position of each exon in relation to the full length sequence. In addition, the skilled artisan could compile all of the exon sequences in Figure 1 of the specification to determine the full length nucleotide sequence of the BRCA2 sequence and subsequently align this sequence to determine the position of each of the exons, thereby determining the position in each exon in relationship to the full length sequence. Lastly, the specification also provides the full length nucleotide sequences for the unique BRCA2 coding sequences designated omi1-omi5 (SEQ ID NO: 4, 6, 8, 10, & 12) which can also be used to identify the full-length BRCA2 nucleotide numbers of each of the exon positions in these claims.

III. Response to the rejection under 35 U.S.C. § 112 (first paragraph)

Claims 84-86 were rejected under 35 U.S.C. § 112 (first paragraph) for purportedly containing new subject matter in the negative limitation "not adenine" of claim 84. The office

action purports that a negative limitation in a claim must have basis in the original disclosure citing *Ex parte Grasselli*, 231 USPQ 393. Applicants submit that the lack of literal basis in the specification for a negative limitation does not always establish a prima facie case for lack of descriptive support (see *Ex parte Parks*, 30 USPQ2d 1234, 1236).

In *Ex parte Parks*, the Board distinguished the situation in *Ex parte Grasselli* from the issue being ruled upon based upon the introduction of new inventive concepts by a negative limitation. More specifically, the Board found that a claim containing a negative limitation which lacks literal support in the specification is not in violation of 35 U.S.C. § 112 (first paragraph) provided it does not introduce new concepts into the claimed invention (*Ex parte Parks*, 30 USPQ2d 1234, 1236).

Respectfully, Applicants submit that in the present situation, the negative limitation does not introduce new inventive concepts into the claims because Applicants isolated BRCA2 sequences claimed in this application and compared these sequences to the BRCA2 sequence known in art to determine the correct BRCA2 sequence as well as the unique differences between the sequences of the invention and the BRCA2 sequence in the prior art. For instance, Table 3 describes the nucleotide residue in the GenBank haplotype compared to the five BRCA2 sequences of the invention. Accordingly, Applicants are merely claiming around the sequences known in the art and not introducing new inventive concepts.

Claims 61-86 were rejected purportedly because neither the claims nor the specification identify the nucleotide positions in the claimed BRCA2 gene that correspond to the positions referenced in the individual exons. Applicants again submit for the reasons discussed above, that it would be routine for the skilled artisan to identify the nucleotide positions cited in the claimed exons in relationship to the full length BRCA2 sequence. Furthermore, Applicants have provided the full length unique BRCA2 coding sequences designated omi1-omi5 (SEQ ID NO: 4, 6, 8, 10, & 12) which can also be used to identify the individual positions of each of the exon positions in these claims. In light of the disclosure in the specification, Applicants respectfully

submit that nothing outside of the disclosure is required by the skilled artisan to determine the location of the nucleotide positions in each of the claims.

Claims 61-86 were rejected under 35 U.S.C. § 112 (first paragraph) purportedly because the claims recite only a partial nucleotide sequence and that the specification does not provide sufficient basis for predicting the remaining BRCA2 sequence. Applicants respectfully submit that these claims are directed toward novel permutations of the BRCA2 gene and therefore it is not necessary to describe the remaining BRCA2 sequence outside of those specific regions or nucleotide positions. Applicants further submit that because the claim language recites a "BRCA2 gene" there is sufficient description such that one of ordinary skill in the art can readily ascertain the scope of the pending claims, *i.e.*, any BRCA2 nucleotide sequence containing the recited nucleotides or sequences.

IV. Response to the rejection under 35 U.S.C. § 112 (second paragraph)

Claims 61-86 were rejected under 35 U.S.C. § 112 (second paragraph) because no positional relationship with regard to the BRCA2 sequence is provided in the disclosure for the exons or nucleotide positions in the claims. Applicants have provided a substitute sequence listing with all of the claimed exons disclosed in Figure 2 of the specification. Applicants have also amended the specification to include sequence identifiers for these exons. For the reasons discussed above, Applicants respectfully submit using the sequences disclosed in the sequence listing, it is possible to determine the nucleotide positions of each of the claims in relationship to the full length BRCA2 sequence.

Claim 62 was rejected as being confusing for insertion of the term "by" in line two of the claim. Applicants have amended claim 62 to delete this word and therefore the rejection is moot. Applicants appreciate the Examiner's efforts in bringing this matter to their attention.

III. Conclusion


The foregoing amendments and remarks are being made to place the application in condition for allowance. Applicants respectfully request reconsideration and the timely allowance of the pending claims. A favorable action is awaited. Should the Examiner find that an interview would be helpful to further prosecution of this application, she is invited to telephone the undersigned at her convenience.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

If there are any additional fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

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